

WHAT IS CLAIMED IS:

1. A semiconductor apparatus comprising:
serially-connected bodies comprised of a switch element
and a resistance element respectively interposed between a
plurality of terminals adjacent to one another;
terminals for a conduction test respectively connected
to one and another ends of a series of the serially-connected
bodies; and
10 a switch control terminal for collectively controlling
all the plural switch elements.
2. A semiconductor apparatus as claimed in Claim 1, wherein
each resistance value of the plural resistance elements
in a series of the plural serially-connected bodies is
15 weighted.
3. A semiconductor apparatus comprising:
serially-connected bodies comprised of a switch element and
a resistance element respectively interposed between a
plurality of terminals adjacent to one another;
20 a switch element on a power-supply potential side for
connecting one end of a series of the serially-connected bodies
to a power-supply potential;
a switch element on a ground potential side for connecting
another end of a series of the serially-connected bodies to
25 a ground potential;
a switch control terminal for collectively controlling
all the plural switch elements;
a resistance element for dividing voltage serially
connected to a group of the resistance elements in a series
30 of the serially-connected bodies in order to divide voltage;
a logic element for detecting a potential variation at
a point of dividing voltage between the resistance elements
of a series of the serially-connected bodies and the

voltage-dividing resistance element; and
a terminal for a conduction test connected to an output
side of the logic element.

4. A semiconductor apparatus, wherein
5 first and second semiconductor chips respectively
having a plurality of chip-connecting terminals are mounted
in a package; and
the respective chip-connecting terminals of the first and the
second semiconductor chips are connected to each other via
10 wires; comprises:

switch elements alternately interposed on the first
semiconductor chip side and second semiconductor chip side
between the plural wires adjacent to one another;

15 terminals for a conduction test respectively connected
to one and another ends of a series of the serially-connected
switch elements; and

a switch control terminal for collectively controlling
all the plural switch elements.

5. A semiconductor apparatus as claimed in Claim 4, wherein
20 a resistance element is serially connected to each of
the plural switch elements.

6. A semiconductor apparatus as claimed in Claim 5, wherein
each resistance value of the plural resistance elements
is weighted.

25 7. A semiconductor apparatus, wherein
first and second semiconductor chips respectively
having a plurality of chip-connecting terminals are mounted
in a package; and
the respective chip-connecting terminals of the first and the
30 second semiconductor chips are connected to each other via
wires; comprises:

on the first semiconductor chip side,
serially-connected bodies each comprised of a switch

element and a resistance element respectively interposed between the plural chip-connecting terminals adjacent to one another;

5 terminals for a conduction test connected to one and another ends of a series of the serially-connected bodies; and

a switch control terminal for collectively controlling all the plural switch elements.

8. A semiconductor apparatus, wherein

10 first and second semiconductor chips respectively having a plurality of chip-connecting terminals are mounted in a package; and

the respective chip-connecting terminals of the first and the second semiconductor chips are connected to each other via 15 wires; comprises:

on the first semiconductor chip side,

switch elements interposed between the respective plural chip-connecting terminals and a terminal for a conduction test; and

20 a switch control device for selectively controlling on/off of the plural switch elements;

on the second semiconductor chip side,

diodes connected to the plural chip-connecting terminals in a forward direction with respect to a power-supply potential 25 and in a reverse direction with respect to a ground potential;

on the first semiconductor chip side,

line switch elements interposed in lines of the respective plural chip-connecting terminals; and

30 a terminal for a conduction test connected to an on/off control terminal of the line switch elements.

9. - A semiconductor apparatus as claimed in Claim 8, wherein a power-supply potential to be supplied to the first semiconductor chip and a power-supply potential to be supplied

to the second semiconductor chip are separately supplied thereto.

10. A semiconductor apparatus as claimed in Claim 8, wherein
a ground potential to be supplied to the first
5 semiconductor chip and a ground potential to be supplied to
the second semiconductor chip are separately supplied thereto.

11. A semiconductor apparatus, wherein
first and second semiconductor chips respectively
having a plurality of chip-connecting terminals are mounted
10 in a package; and
the respective chip-connecting terminals of the first and the
second semiconductor chips are connected to each other via
wires; comprises:

15 serially-connected bodies each comprised of a switch
element and a resistance element alternately interposed on
the first semiconductor chip side and second semiconductor
chip side between the plural wires adjacent to one another;
a switch element on a power-supply potential side for
connecting one end of a series of the serially-connected bodies
20 to a power-supply potential;

a switch element on a ground potential side for connecting
another end of a series of the serially-connected bodies to
a ground potential;

25 a switch control terminal for collectively controlling
all the plural switch elements;

a resistance element for dividing voltage serially
connected to a group of the resistance elements in a series
of the serially-connected bodies in order to divide voltage;

30 a logic element for detecting that a potential at a point
of dividing voltage between the resistance elements of a series
of the serially-connected bodies and the voltage-dividing
resistance element exceeds a predetermined value; and

a terminal for a conduction test connected to an output

side of the logic element.

12. A semiconductor apparatus, wherein

first and second semiconductor chips respectively having a plurality of chip-connecting terminals are mounted
5 in a package; and

the respective chip-connecting terminals of the first and the second semiconductor chips are connected to each other via wires; comprises:

serially-connected bodies comprised of a switch element

10 and a resistance element alternately interposed on the first semiconductor chip side and second semiconductor chip side between the plural wires adjacent to one another;

a switch element on a power-supply potential side for connecting one end of a series of the serially-connected bodies
15 to a power-supply potential;

a switch element on a ground potential side for connecting another end of a series of the serially-connected bodies to a ground potential;

a switch control terminal for collectively controlling
20 all the plural switch elements;

a resistance element for dividing voltage serially connected to a group of the resistance elements in a series of the serially-connected bodies in order to divide voltage;

25 a logic element for detecting that a potential at a point of dividing voltage between the resistance elements of a series of the serially-connected bodies and the voltage-dividing resistance element falls below a predetermined value; and

a terminal for a conduction test connected to an output side of the logic element.

30 13. A semiconductor apparatus, wherein

first and second semiconductor chips respectively having a plurality of chip-connecting terminals are mounted in a package; and

the respective chip-connecting terminals of the first and the second semiconductor chips are connected to each other via wires; comprises:

5 serially-connected bodies each comprised of a switch element and a resistance element alternately interposed on the first semiconductor chip side and second semiconductor chip side between the plural wires adjacent to one another;

10 a switch element on a power-supply potential side for connecting one end of a series of the serially-connected bodies to a power-supply potential;

 a switch element on a ground potential side for connecting another end of a series of the serially-connected bodies to a ground potential;

15 a switch control terminal for collectively controlling all the plural switch elements;

 a resistance element for dividing voltage serially connected to a group of the resistance elements in a series of the serially-connected bodies in order to divide voltage;

20 a first logic element for detecting that a potential at a point of dividing voltage between the resistance elements of a series of the serially-connected bodies and the voltage-dividing resistance element exceeds a predetermined value;

25 a second logic element for detecting that a potential at a point of dividing voltage between the resistance elements of a series of the serially-connected bodies and the voltage-dividing resistance element falls below a predetermined value; and

30 terminals for a conduction test connected to output sides of the first and the second logic elements.

14. A semiconductor apparatus, wherein

 first and second semiconductor chips respectively having a plurality of chip-connecting terminals are mounted

in a package; and
the respective chip-connecting terminals of the first and the second semiconductor chips are connected to each other via wires; comprises:

- 5 on the first semiconductor chip side,
 serially-connected bodies comprised of a switch element and a resistance element respectively interposed between the plural chip-connecting terminals adjacent to one another;
 a switch element on a power-supply potential side for connecting one end of a series of the serially-connected bodies to a power-supply potential;
- 10 a switch element on a ground potential side for connecting another end of a series of the serially-connected bodies to a ground potential;
- 15 a switch control terminal for collectively controlling all the plural switch elements;
 a resistance element for dividing voltage serially connected to a group of the resistance elements in a series of the serially-connected bodies in order to divide voltage;
- 20 a logic element for detecting a potential at a point of dividing voltage between the resistance elements of a series of the serially-connected bodies and the voltage-dividing resistance element; and
 a terminal for a conduction test connected to an output side of the logic element.

25 15. A semiconductor apparatus as claimed in any of Claims 1, 3, 4, 7, 8, 11, 12, 13 and 14 wherein

 the switch elements are formed from N-type or P-type MOS transistors, or N-type and P-type MOS transistors.

30 16. A semiconductor apparatus as claimed in any of Claims 1, 3, 5, 7, 11, 12, 13 and 14 wherein

 the resistance elements are formed from N-type or P-type transistors, or N-type and P-type MOS transistors.